

## Lean manufacturing sparks revival

By Jeffrey t. lavery

If you listen to some industry experts, only high-tech industries in Massachusetts can survive the new wave of low-cost global competition.

Proving that theory wrong, however, are companies ranging from greeting card makers to designers of fueling stations. These firms are revamping their operations and regaining their competitive edge with the help of the nonprofit Massachusetts Manufacturing Extension Partnership (MEP), part of a network of some 400 business advisory centers nationwide.

Over the past year, Massachusetts MEP clients report that 878 jobs have either been retained or created. The firms also have spent \$12.1 million on new equipment.

"The opportunities in Central Mass. are better than other parts of the state," says Jack Healey, director of the Mass. MEP. "But you need a leader who is willing to change the company. Without that, you've got nothing."

### Lean principles boost output

Several local firms are enjoying the payoffs from adopting lean manufacturing tactics. The Mass. MEP offers consulting services that help manufacturers create a more effective working environment, whether its revamping the shop floor or devising ways to improve the time-to-market of products. The MEP's consulting fees average \$25,000, often with a 27 to 1 return, says Healey.

Hudson-based Entwistle designs and builds complex fueling systems for both commercial and military customers. One major customer, shipbuilder Northrop Grumman in Newport News, VA, had its suppliers attend lean manufacturing seminars, and Entwistle was there, with the help of the MEP.

"When the MEP came in here for lean manufacturing, we looked at more efficient ways to set up machines," says Cary Corkin, vice president of military products. "They also look at the ways orders are processed and at getting the job processed as quickly as possible."



*Charlton-based Miniature Tool & Die manufactures micro-molded components, the smallest of which contains 520 parts per plastic pellet.*

Among others helped by the MEP is Miniature Tool and Die in Charlton. It sells precision parts to medical OEMs that produce minimally invasive surgery devices. Foreign competition in mold making sent the company into survival mode, says Donna Bibber, VP of Sales & Marketing. With investments totaling hundreds of thousands of dollars, Miniature Tool and Die dove into micro manufacturing.

The MEP helped the company institute ISO 9001-2000, a quality system required by the medical industry to get on an approved supplier list.

"The MEP helped us finance a portion of the ISO 9001 implementation," says Bibber. "They also helped us establish intellectual property, such as patents and trade secrets."

In West Boylston, social invitation printer Checkerboard doubled its staff and saw 20 percent growth over the past five years, says Mika Chase, president and CEO. While his competition goes overseas, Chase uses his employees and the Massachusetts Training Grant to buck that trend. The grant, the cost of which is matched by the state, helped institute lean manufacturing practices and provided workshops, such as those devoted to teaching English to non-native speakers.

"Some people think of lean manufacturing as leaning out the workforce. Not at all," says Chase. "It's leaning out the manufacturing process."

The MEP remains active with Checkerboard, and helped cut time-to-market from a few days to a few hours by combining formerly separate departments into one.



*Entwistle's FORCE System can move up to 4500 gallons of fuel per minute, servicing up to six aircraft at a time.*

### **Automation nets big growth**

For another two companies, lean manufacturing combined with automation investments to help turn things around. Spencer-based FLEXcon and Mar-Lee Mold in Leominster both bought new equipment and enhanced manufacturing techniques with help from the MEP.

FLEXcon's customer base shrank in 2001 when the telecom industry crashed, says Neil McDonough, president and CEO. The manufacturer coats film materials for labels used to identify products.

"We bought 6 new pieces of equipment and threw out 18 pieces of old equipment," observes McDonough. "The new machines were much more productive, with computer controls and automatic settings, and we also invested in an automated packing line."

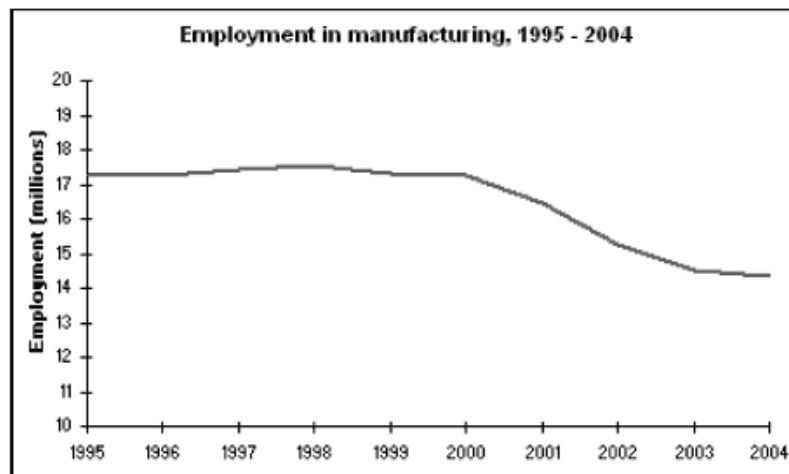
Though the custom nature of his business prevents all of his products from being shipped without human touch, 25 percent of finished products go through the automated shipping line. After an MEP-sponsored workshop, FLEXcon addressed late orders by placing an information board on the shop floor showing present and future orders.

"What I liked about lean manufacturing is it's really back to basics," says McDonough. "If you were starting a business, this is how you'd start it out."

At Mar-Lee Company, which includes a division that operates as a mold maker and precision injection molder, lean principles were already established. But the company still needed to improve its manufacturing practices and add more automation to stay competitive, notes John Gravell, president.

Mar-Lee adopted kanbans, a manufacturing control system by which parts are ordered only as needed to reduce excess inventory. The company also implemented work cells.

"In the past, we had 20 different people making one part, and now we've got it down to 3 or 4," says Gravell. "We're in the process of implementing that type of thinking throughout the company."



*Manufacturing employment faces rough waters in Massachusetts.*

### Fighting for funding

Companies have adopted these new lean manufacturing methods partly in reaction to the decline in business from original equipment manufacturers. When global competitors take away customers, it's not just the OEM that downsizes, but suppliers of parts for that OEM as well.

"If an OEM manufacturer says they're moving their factories and getting rid of x amount of jobs, they're really getting rid of 3 times that many jobs," explains Healey of Mass. MEP. "People don't understand that."

With manufacturers still struggling to upgrade operations, the MEP now faces a Bush Administration proposal to cut the \$106 million annual funding for MEP's branch offices by 56%.

The state's manufacturing base can ill afford a reduction in any programs aimed at making that sector more competitive. Observers note that Massachusetts has recovered only modestly from the 1999-2004 period in which manufacturing jobs declined by an average of 5% annually.

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